US Army Corps of Engineers®

PRINCIPLES & GUIDELINES

Overview Briefing

August 2006

US Army Corps of Engineers®

History

- 1936 Flood Control Act
- 1958 Green Book
- 1962 Senate Document 97
- 1965 Water Resources Planning Act
- 1970 Flood Control Act
- 1973 Principles & Standards
- 1974 Water Resources Development Act
- 1980 Principles, Standards and Procedures
- 1983 Principles & Guidelines

US Army Corps of Engineers®

Flood Control Act of 1936

- Important turning point in the scope of the Corps' water resources activities as the economic text first appeared in legislation specifying that "the benefits to whomsoever they may accrue are in excess of the estimated costs."

US Army Corps of Engineers®

1958 Green Book

- "Proposed Practices for Economic Analysis of River Basin Projects" by the Committee on Water Resources
- Considered benefit-cost practices then in use and analyzed the economics of river basin projects that were uninfluenced by those practices or by legal and administrative limitations

US Army Corps of Engineers®

1962 Senate Document 97

- The President's Water Resources Council report on Policies, Standards and Procedures…for Water Resources Plans
- Established uniform policies, standards and procedures for the formulation and evaluation of water resource projects

US Army Corps of Engineers®

Water Resources Planning Act of 1965

- Established the:
  - *Water Resources Council (WRC)*

    developed the Federal multi-objective, multipurpose planning procedures under the WRC's Principles and Standards (P&S) and later Principles and Guidelines (P&G) for Water Resources Planning which included benefit-cost analysis for water quantity planning
  - *Title II River Basin Commissions*

    charged with preparing comprehensive coordinated joint plans with Federal agencies and the states

US Army Corps of Engineers®

Flood Control Act of 1970

- “It is the intent of congress that the objectives of enhancing regional economic development, the quality of the total environment, including its protection and improvement, the well-being of the people of the united states, and the national economic development are the objectives to be included in federally financed water resource projects (including shore protection projects such as projects for beach nourishment including the replacement of sand) [()added by WRDA’96] and in the evaluation of benefits and cost attributable thereto, giving due consideration to the most feasible alternative means of accomplishing these objectives.”

US Army Corps of Engineers®

Development of the 1973 Principles and Standards

- A replacement for “policies, standards and procedures in the formulation, evaluation and review of plans for use and development of water and related land resources” (Senate Document 97), 1962

1973 Principles and Standards

US Army Corps of Engineers®

- Two objectives/four accounts
  - NED and EQ
- Discount rate based on the average cost of federal borrowing

US Army Corps of Engineers®

Section 80 of WRDA of 1974

- Restored the December 24, 1968 WRC discount rate formula
- Provided for grandfathering of the discount rate for certain projects at the pre-December 24,1968 rate
- Directed study of objectives, discount rate and cost sharing options with results and recommendations to Congress

US Army Corps of Engineers®

1980 Principles and Standards

- Issued as “rules” for level C (project) studies only
- Two objectives: NED and EQ
- Required a NED plan, an EQ plan where possible
- Required a “primarily non-structural plan.”
- Clarified language and issued detailed procedures

US Army Corps of Engineers®

Revisions to 1980 Principles and Standards

- 1980 Principles & Standards seen as unduly burdensome and arbitrary
- Policy, Standards & Principles as “rules” invited litigation
- Interagency task force created to revise Policy, Standards & Principles and eliminate their rule status
- Cost sharing reform viewed as key to better projects

US Army Corps of Engineers®

1983 Principles and Guidelines

- Single Federal objective, four accounts
- Provision for ad hoc accommodation of other “concerns”
- Clarified and made technical improvements to standards
- Allowed alternative calculations to improve accuracy of benefit estimates

US Army Corps of Engineers®

The P&G

Economic and Environmental Principles and Guidelines for Water and Related Land Resources Implementation Studies

March 10, 1983

- Foreword by James Watt
- Statement of Principles by Ronald Reagan
- Guidelines
  - Standards
  - Procedures
    - NED
    - EQ

US Army Corps of Engineers®

Principles

The principles are intended to insure proper and consistent planning by Federal water resourc agencies (4) in the formulation an evaluation of water resource implementation studies.

US Army Corps of Engineers®

Principles

- Purpose & Scope
- Federal Objective
- State & Local Concerns
- International Concerns
- Alternative Plans*
- Plan Selection*
- Accounts*
- Discount Rate
- Period of Analysis
- Risk and Uncertainty*
- Cost Allocation
- Planning Guidelines
- Effective Date

P & G Federal Objective

US Army Corps of Engineers®

- “[T]o contribute to national economic development consistent with protecting the nation’s environment, pursuant to national environmental statutes, applicable executive orders and other Federal planning requirements.”

P & G Definition of NED

US Army Corps of Engineers®

- “[I]increases in the net value of the national output of goods and services expressed in monetary units….Direct net benefits that accrue in the planning area and the rest of the nation…. Increases in the net value of those goods and services that are marketed and also of those that may not be marketed.”

US Army Corps of Engineers®

Guidelines

- Standards and procedures, in the form of guidelines, have been issued to ensure consistency of Federal water resource agency planning.
  - Chapter I – Standards
  - Chapter II – National Economic Development (NED) Benefit Evaluation Procedures
  - Chapter III – Environmental Quality (EQ) Evaluation Procedures

US Army Corps of Engineers®

Standards

- Introduction
- Federal Objective
- Summary of Planning Process*
- General Planning Considerations
- Inventory & Forecast of Conditions Without a Plan
- Alternative Plans*
- Accounts*
- Displays
- Cost Allocation
- Plan Selection*
- Risk and Uncertainty*

US Army Corps of Engineers®

The Planning Steps

- Identify problems and opportunities for protection and enhancement
- Inventory the quantity and quality of resources, establish the existing conditions and forecast the without project conditions
- Formulate alternative plans
- Evaluate alternative plans
- Compare plans
- Select best plan

US Army Corps of Engineers®

Plan Formulation

- Plan formulation means systematically evaluating alternative measures and combinations of measures and alternative project scales to identify the “best” plan for addressing a set of objectives and constraints – an iterative process

US Army Corps of Engineers®

Alternative Plans

- An alternative plan consists of a system of structural and/or nonstructural measures, strategies or programs
- Plans should be significantly different
- Should not be limited to those the planning agency could implement
- Mitigation is an integral part of each plan

US Army Corps of Engineers®

Four Plan Formulation "Criteria"

- Completeness (to ensure realization of the planned effects)
- Effectiveness (extent to which plan alleviates specified problems and achieves specified opportunities)
- Efficiency (extent to which plan is most cost effective means of alleviating specified problems and achieving specified opportunities)
- Acceptability (to State and local entities and compatibility with existing laws and regulations)

US Army Corps of Engineers®

Four Accounts

Purpose: To facilitate evaluation and display of effects of alternative plans which may have a material bearing on the decision making process.

- National Economic Development (changes in economic value of national output of goods and services)
- Environmental Quality (nonmonetary effects on significant natural and cultural resources)
- Regional Economic Development (changes in the distribution of regional economic activity)
- Other Social Effects (registers other plan effects)

What Is the “Best Plan?"

US Army Corps of Engineers®

- The NED plan: “reasonably maximizes NED benefits consistent with the Federal objective.”
- “Other alternative plans may be formulated which reduce net NED benefits in order to further address other Federal, state, local and international concerns not fully addressed by the NED plan.”

US Army Corps of Engineers®

Plan Selection Policy

- “[T]he alternative plan with the greatest net economic benefit, consistent with protection of the nation’s environment unless the secretary of a department or head of an independent agency grants an exception to this rule.”

US Army Corps of Engineers®

Risk and Uncertainty

- Defines the concepts and sources of risk and uncertainty
- Emphasizes the importance of considering risk and uncertainty in water resources planning
- Provides guidelines for risk and uncertainty considerations throughout the planning process

US Army Corps of Engineers®

P&G Supports Proper and Consistent Planning

- Provides for planning within a rigorous analytical framework
- Provides for consistency in the planning process
- Evidenced by-
  - the Guidelines and Procedures, continuously applied over 30 years
  - continuous minor revision and improvement
  - comprehensive supplementary guidance (techniques and procedures, IWR Manuals, etc)
  - capability of review

Corps Implementation of P&G

US Army Corps of Engineers®

- P&G allows us to meet today's water resource needs
  - Extending our Risk and Uncertainty procedures
  - Developing Combined NED/NER plans
  - Pursuing watershed studies / evaluations
  - Incorporating Environmental Operating Principles

US Army Corps of Engineers®

Summary

- The P&G have evolved as the analytical framework underpinning the Corps planning program
- The Corps has updated its Planning Guidance Notebook and training programs commensurate with the P&G as the overarching framework, with a focus on continued improvement in the technical guidance
- The P&G has withstood the test of time, in a changed cost sharing environment post-WRDA '86
- The P&G enables a common understanding of current policy and a consistent approach
- Fundamentals of the P&G provide the basis for a quality analysis and consistent application of policy